

MAMMALIAN TUMOR SUSCEPTIBILITY GENES AND THEIR USES

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ABSTRACT OF THE DISCLOSURE

TSG101 is a tumor susceptibility gene whose homozygous functional knock out in fibroblasts leads to transformation and the ability of these cells to form metastatic tumors in nude mice. The cellular transformation that results from inactivation of *TSG101* is reversible by restoration of *TSG101* function. Decreased expression of *TSG101* is associated with the occurrence of certain human cancers, including breast carcinomas. The *TSG101* nucleic acid compositions find use in identifying homologous or related proteins and the DNA sequences encoding such proteins; in producing compositions that modulate the expression or function of the protein; and in studying associated physiological pathways. In addition, modulation of the gene activity *in vivo* is used for prophylactic and therapeutic purposes, such as treatment of cancer, identification of cell type based on expression, and the like. The DNA is further used as a diagnostic for a genetic predisposition to cancer, and to identify specific cancers having mutations in this gene.